

REMARKS

With entry of the present amendment the application will contain claims 1-16.

Issues under 35 U.S.C. 103

The rejection in paragraph 1 of the last Office Action of claims 1-6 and 8-13 as obvious over USP 5,346,217 (Tsuchiya '217) is traversed on multiple grounds.

Tsuchiya '217 mentions the word "casting" only once. That single reference to "casting" is in the following sentence:

In addition when such ribs of, for example, 1.5 to 2.0 mm thickness are inserted into the face section, cast defects and/or segregation are apt to be generated during casting process. (Column 2; Line 43; emphasis supplied)

By the above sentence, Tsuchiya '217 teaches one skilled in the art that casting causes problems. Tsuchiya '217 elaborates on the adverse effects of employing casting. Tsuchiya '217 states:

Not only such a trouble in production, presence of such ribs in the face degrades flexion of the face at striking balls, which poses no sufficient repulsion on balls to be stricken[sic. stricken] by the face. Such poor repulsion results in significant difference in behaviour [sic. behavior] time between elastic flexion of the face and elastic deformation of the ball. As a consequence, there is little coincidence between the recovery forces of the face and the ball resulted from their elastic recovery. Thus flexion of the face cannot be effectively utilized for deformation recovery of the ball and enhancement in speed of the ball after striking, thereby causing short fly of the ball in an unintended direction. (Column 2; Lines 46-58)

Tsuchiya '217 teaches that casting should be avoided. If casting is employed likely problems include, among others: degradation of flexion, poor repulsion, and short fly in the unintended direction. Tsuchiya '217 teaches away from the present invention employing casting.

Tsuchiya '217 teaches the construction of metallic parts 21-23 of the club head main body 10, by plastic working not by casting. The skilled artisan who reads Tsuchiya '217 without prejudice, would not be tempted to make only Tsuchiya part 23 by casting.

As to the claimed thickness change of the walled sole part, aside from a thickness variation which may be unavoidably caused during plastic working, Tsuchiya '217 neither teaches nor suggests a change in the thickness of a metallic part such as part 23 on purpose. Although Tsuchiya '217 discloses a broad range of thicknesses, it must be remembered that this range of thicknesses is intended to relate to plastic working and the illustrated thicknesses in the drawings of Tsuchiya '217. This really teaches one skilled in the art that a constant thickness within the range is desirable.

Tsuchiya '217 teaches the use of rolled sheet metal referred to by him as "rolled metallic thin plate". Tsuchiya

'217 states:

One example of production of such a club head main body 10 is shown in FIG. 3, in which a rolled metallic thin plate 20 is used as the starting material. (Column 4; Line 61; emphasis supplied)

The Examiner is asked to take judicial notice of the fact that rolled sheet metal has a generally uniform thickness.

In summary Tsuchiya '217 does not render the claimed invention obvious but rather teaches away from the claimed invention which requires casting.

The rejection of claim 7 in paragraph 2 of the last Office Action as obvious over Tsuchiya '217 in view of USP 6,162,133 (Peterson) and USP 5,205,560 (Hoshi) is traversed. The deficiencies of Tsuchiya '217 are not supplied by either Peterson or Hoshi. Claim 7 is furthermore patentable because claims 1, 2, and 3, from which claim 7 depends, are patentable.

Peterson teaches the construction of a club head by casting it as a one-piece body including at least the face, crown and sole. That is not the claimed invention.

Neither Peterson nor Hoshi contain a teachings of combining casting and plastic forming. Tsuchiya '217 is devoid of any motivation or suggestion of making the walled sole member by casting and the face member and crowned member by plastic deformation. If anything, the skilled artisan reading Tsuchiya

'217 would have found it to be reasonable to make the entire head, accepting hosel 40 by plastic working.

Even assuming arguendo the obviousness of the combination of Peterson and Hoshi with Tsuchiya '217, the claimed structure is not taught.

It is furthermore not obvious from the teachings of the prior art, either alone or in combination, that any advantage can be obtained when the walled sole member has a variable thickness whose max/min ratio ( $t_2/t_1$ ) is set in the specific range of from 1.2 to 3.0.

#### Summary

In summary it is respectfully submitted that Tsuchiya '217 teaches away from casting because casting causes so many problems and that the deficiencies of Tsuchiya '217 are not supplied by the secondary references namely Peterson and Hoshi. Even assuming arguendo the obviousness of the combination the result would still not be subject matter within the scope of that claimed.

#### Conclusion


Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) respectfully petition(s) for a two (2) month extension of time for filing a reply in connection with the present application, and the required fee of \$420.00 is attached hereto.

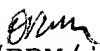
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact David R. Murphy (Reg. No. 22,751) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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